

ESTIMATED AVOIDED ENERGY COSTS
18 C.F.R. § 292.302(b)(1)

The estimated avoided cost on the electric utility's system, solely with respect to the energy component, for various levels of purchases from qualifying facilities. Such levels of purchases shall be stated in blocks of not more than 100 megawatts for systems with peak demand of 1,000 megawatts or more, and in blocks equivalent to not more than 10 percent of the system peak demand for systems of less than 1,000 megawatts. The avoided costs shall be stated on a cents per kilowatt-hour basis, during daily and seasonal peak and off-peak periods, by year, for the current calendar year and each of the next five years.

RESPONSE:

WINTER AVERAGE AVOIDED ENERGY COST BY PERIOD (¢/kWh)

BEGIN CONFIDENTIAL

Year	Premium On-Peak Hours	Average AM On-Peak Hours	Average PM On-Peak Hours	Average Off-Peak Hours
2020				
2021				
2022				
2023				
2024				
2025				

END CONFIDENTIAL

SUMMER AVERAGE AVOIDED ENERGY COST BY PERIOD (¢/kWh)

BEGIN CONFIDENTIAL

Year	Premium On-Peak Hours	Average AM On-Peak Hours	Average PM On-Peak Hours	Average Off-Peak Hours
2020				
2021				
2022				
2023				
2024				
2025				

END CONFIDENTIAL

SHOULDER AVERAGE AVOIDED ENERGY COST BY PERIOD (¢/kWh)**BEGIN CONFIDENTIAL**

Year	Average AM & PM On-Peak Hours	Average Midday On-Peak Hours	Average Off-Peak Hours
2020			
2021			
2022			
2023			
2024			
2025			

END CONFIDENTIAL

Notes:

- 1) Energy costs are expressed in nominal dollars and do not incorporate additional considerations used in rate calculations.
- 2) Energy price periods are per PSCSC Docket No. 2019-185-E.

HOOR DEFINITIONS

Season	Period	Days	Months	Hours
Winter	Premium	Mon – Fri ¹	Dec - Feb	6:00 am – 9:00 am
Winter	On-Peak Morning	Mon – Fri ¹	Dec - Feb	5:00 am – 6:00 am & 9:00 am – 10:00 am
Winter	On-Peak Evening	Mon – Fri ¹	Dec - Feb	5:00 pm – 10:00 pm
Winter	Off-Peak	Mon – Fri ¹	Dec - Feb	Remaining Hours + Holidays
		Sat – Sun		All Hours
Summer	Premium	Mon – Fri ¹	Jun - Sept	4:00 pm – 8:00 pm
Summer	On-Peak Morning	Mon – Fri ¹	Jun - Sept	7:00 am – 12:00 pm
Summer	On-Peak Evening	Mon – Fri ¹	Jun - Sept	12:00 pm – 4:00 pm & 8:00 pm – 10:00 pm
Summer	Off-Peak	Mon – Fri ¹	Jun - Sept	Remaining Hours + Holidays
		Sat – Sun		All Hours
Shoulder	On-Peak	Mon – Fri ¹	Mar - May, Oct - Nov	6:00 am – 10:00 am & 4:00 pm – 11:00 pm
Shoulder	On-Peak Midday	Mon – Fri ¹	Mar - May, Oct - Nov	10:00 am – 4:00 pm
Shoulder	Off-Peak	Mon – Fri ¹	Mar - May, Oct - Nov	Remaining Hours + Holidays
		Sat – Sun		All Hours

Notes:

- 1) Excludes holidays considered as off-peak (New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and the day after, and Christmas Day).

Duke Energy Carolinas, LLC - Avoided Cost Information

PSCSC Docket No. 2019-185-E

PUBLIC VERSION

FUTURE RESOURCE ADDITIONS
18 C.F.R. § 292.302(b)(2)

The electric utility's plan for the addition of capacity by amount and type, for purchases of firm energy and capacity, and for capacity retirements for each year during the succeeding 10 years.

RESPONSE:

PROPOSED RESOURCE CAPACITY ADDITIONS

Year	Winter Capacity (MW)	Description (Date Installed)
2021	65 16 9	Bad Creek Uprate (June 2020) Combined Heat and Power (December 2020) Energy Storage (December 2020)
2022	65 30 20	Bad Creek Uprate (June 2021) Combined Heat and Power (December 2021) Energy Storage (December 2021)
2023	65 30 25	Bad Creek Uprate (June 2022) Combined Heat and Power (December 2022) Energy Storage (December 2022)
2024	65 25	Bad Creek Uprate (June 2023) Energy Storage (December 2023)
2025	402 25	Lincoln Project (December 2024) Energy Storage (December 2024)
2026	25	Energy Storage (December 2025)
2027	25	Energy Storage (December 2026)
2029	457	Combustion Turbine (December 2028)
2030	457	Combustion Turbine (December 2029)

Notes:

- 1) Data Source: October 2020 Large QF Tariff (PSCSC Docket No. 2019-185-E). (Based on 2020 IRP Base Case without Carbon Policy)
- 2) All values represent incremental MW in the year in which the resource impacts winter peak.

PROPOSED RESOURCE CAPACITY RETIREMENTS

Year	Winter Capacity (MW)	Description (Date Retired)
2022	167 270 267	Allen 2 (December 2021) Allen 3 (December 2021) Allen 4 (December 2021)
2024	167 259	Allen 1 (December 2023) Allen 5 (December 2023)
2026	546	Cliffside 5 (December 2025)

Notes:

- Data Source: October 2020 Large QF Tariff (PSCSC Docket No. 2019-185-E). (Based on 2020 IRP Base Case without Carbon Policy)
- The year is the year in which the capacity impacts the winter peak.
- All retirements are for planning purposes only.
- The date retired is the month and year that the asset is taken out of service.
- Retirement dates based on most economic retirement dates determined in the Coal Retirement Study presented in 2020 NC and SC IRP.

PROPOSED PURCHASE CAPACITY ADDITIONS

DEC Base Renewables – Compliance + Non-Compliance Nameplate MW				
	Solar	Solar + Storage	Biomass/Hydro	Total
2021	849	0	132	981
2022	1,243	115	118	1,476
2023	1,434	114	81	1,629
2024	1,434	114	81	1,629
2025	1,424	113	59	1,596
2026	1,400	113	49	1,562
2027	1,392	112	49	1,553
2028	1,370	111	42	1,523
2029	1,254	111	42	1,407
2030	1,190	110	38	1,338

Notes:

- Data Source: October 2020 Large QF Tariff (PSCSC Docket No. 2019-185-E). (Based on 2020 IRP Base Case without Carbon Policy)
- Information presented in the year in which the capacity impacts the winter peak.
- Solar, Solar + Storage and Biomass/Hydro represent cumulative total in the year provided.
- Solar includes 0.5% per year degradation.
- Renewables capacity listed excludes REC-Only contracts.

CAPITAL AND ENERGY COSTS OF PLANNED ADDITIONS
18 C.F.R. § 292.302(b)(3)

The estimated capacity costs at completion of the planned capacity additions and planned capacity firm purchases, on the basis of dollars per kilowatt, and the associated energy costs of each unit, expressed in cents per kilowatt-hour. These costs shall be expressed in terms of individual generating units and of individual planned firm purchases.

RESPONSE:

ESTIMATED CAPITAL AND ENERGY COSTS FOR PLANNED CAPACITY ADDITIONS

BEGIN CONFIDENTIAL

2021 (Jun)	65 MW Bad Creek Uprate Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
2021 (Dec)	30 MW Combined Heat and Power Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
	20 MW Energy Storage Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
2022 (Jun)	65 MW Bad Creek Uprate Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
2022 (Dec)	30 MW Combined Heat and Power Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
	25 MW Energy Storage Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
2023 (Jun)	65 MW Bad Creek Uprate Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
2023 (Dec)	25 MW Energy Storage Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
2024 (Dec)	25 MW Energy Storage Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
	402 MW Lincoln Project Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh

2025 (Dec)	25 MW Energy Storage Capacity Cost: \$ [REDACTED]/kw Energy Cost: [REDACTED] cents/kWh
2026 (Dec)	25 MW Energy Storage Capacity Cost: \$ [REDACTED]/kw Energy Cost: [REDACTED] cents/kWh
2028 (Dec)	457 MW Combustion Turbine Capacity Cost: \$ [REDACTED]/kw Energy Cost: [REDACTED] cents/kWh
2029 (Dec)	457 MW Combustion Turbine Capacity Cost: \$ [REDACTED]/kw Energy Cost: [REDACTED] cents/kWh

END CONFIDENTIAL

Notes:

- Data Source: October 2020 Large QF Tariff (PSCSC Docket No. 2019-185-E). (Based on 2020 IRP Base Case without Carbon Policy)
- Capacity (MW) reflects winter rating.
- Capacity cost based on generic unit assumptions and expressed in overnight in-service year dollars (excluding AFUDC) unless otherwise noted.
- Energy cost represented in the first full year of operation of the asset.
- Energy cost includes fuel and variable O&M.
- CHP energy cost includes revenues from steam sales.
- Energy Storage capital cost based on 50 MW/200 MWh Li-ion battery.
- Unit uprates greater than 20 MW are included.

ESTIMATED CAPACITY AND ENERGY COSTS FOR PLANNED FIRM PURCHASES

The undesignated renewable resource additions listed under the 292.302(b)(2) requirement involve additions of large numbers of small power producers that will be subject to capacity and energy rates that will be negotiated or in place at the time the agreements are signed.